2002

Annual Consumer Report on the Quality of Tap Water

Fort Riley

Introduction

This is an annual report on the quality of water delivered by Fort Riley. Under the "Consumer Confidence Reporting Rule" of the federal Safe Drinking Water Act (SDWA), community water systems are required to report this water quality information to the consuming public. Presented in this report is information on the source of our water, its constituents and the health risks associated with any contaminants.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: (a) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (b) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. (c) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses. (d) Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems. (e) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

We continually monitor the drinking water for contaminants. Our water is safe to drink; however, some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people

should seek advice about drinking water from their health care providers. The EPA/Center for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline (1-800-426-4791).

The Fort Riley Drinking Water System draws ground water from the alluvial aquifer at the confluence of the Smoky Hill and Republican Rivers. Water drawn out of the eight wells in the alluvial aquifer provides drinking water to Main Post, Custer Hill, Camp Funston, Camp Forsyth, Camp Whitside, and Marshall Army Air Field. Fort Riley has one treatment facility through which our water passes before being consumed.

Monitoring of Your Drinking Water

Our water system uses only EPA-approved laboratory methods to analyze your drinking water. Water samples are taken from the distribution systems and residents' taps by our personnel. Samples are then analyzed on-site or shipped to the Kansas Department of Health and Environment (KDHE) laboratory in Topeka, Kansas.

Fort Riley certified staff conducts the following analyses:

Daily: Hardness, pH, Chlorine residual, Alkalinity, and Fluoride
Weekly: Total dissolved solids
Monthly: Bacteriological (a minimum of 25 samples from the distribution system).

In addition, the KDHE conducts the following analyses:

Quarterly: Trihalomethanes
Annually: Volatile Organic Chemicals and Nitrate
Tri-annually: Lead, Copper, Synthetic Organic Chemicals, and Inorganic Analyses.

Definitions of Key Terms

To gain a better understanding of how the data are presented in the Results Table, several key terms are defined below:

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. The MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. The MCLGs allow for a margin of safety.

Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. Our water system analyzes for some contaminants (including lead and copper) which are governed by ALs, and not MCLs.

A full list of acronyms and terms is included in the Appendix.

Results Table. Detected Contaminants

Contaminates	Date	Result	Unit	MCL	MCLG	Violation	Typical Source
Alkalinity (as CACO3)	Jan 2002	65.26	ppm	60-300	0	No	Erosion of natural deposits
Alpha Emitters	Apr 1999	1.0	pCi/l	15	0	No	Erosion of natural deposits
Aluminum	Jan 2002	1.5	ppb	50-200	0	No	Erosion of natural deposits
Atrazine	Jun 2002	0.30	ppb	3	0	No	Runoff from herbicide used on row crops
Barium	Jan 2002	46.5	ppb	2000	2000	No	Erosion of natural deposits
Calcium	Jan 2002	30.70	ppm	75-200	0	No	Erosion of natural deposits
Chloride	Jan 2002	43.13	ppm	250	0	No	Erosion of natural deposits
Copper	Jan 2002	1.0	ppm	AL=1.3	0	No	Corrosion of household plumbing systems
Corrosivity	Jan 2002	-0.43	LI	0+1.0 0-1.0	0	No	Erosion of natural deposits
Fluoride	Jan 2002	0.95	ppm	4	4	No	Additive which promotes strong teeth
Lead	Jan 2002	1.0	ppb	AL=15	0	No	Corrosion of household plumbing systems
Magnesium	Jan 2002	12.77	ppm	50-150	0	No	Erosion of natural deposits
Nitrate	Jan 2002	0.11	ppm	10	10	No	Erosion of natural deposits
pH	Jan 2002	7.87	pH units	6.5 – 8.5	6.5 –8.5	No	Erosion of natural deposits
Potassium	Jan 2002	9.82	ppm	100	0	No	Erosion of natural deposits
Selenium	Jan 2002	1.5	ppb	50	50	No	Erosion of natural deposits
Silica	Jan 2002	18.929	ppm	50	0	No	Erosion of natural deposits
Sodium	Jan 2002	40.88	ppm	100	0	No	Erosion of natural deposits
Specific Conductivity	Jan 2002	480.90	umho/cm	1500	0	No	Erosion of natural deposits
Sulfate	Jan 2002	103.80	ppm	250	0	No	Erosion of natural deposits
Total Coliform	Jan-Dec 2002	0	number of samples	<1	0	No	Human and animal fecal wastes
Total Dissolved Solids	Jan 2002	299.68	ppm	500	0	No	Erosion of natural deposits
Total Hardness	Jan 2002	129	ppm	400	0	No	Erosion of natural deposits
Total Phosphorous	Jan 2002	0.87	ppm	5.0	0	No	Erosion of natural deposits
Total Trihalomethanes	Jan-Dec 2002	55.6	ppb	100	0	No	By-product of drinking water chlorination
Zinc	Jan 2002	0.005	ppm	5.0	0	No	Erosion of natural deposits

Detected Contaminants

We monitor for various contaminants in the water supply to meet all regulatory requirements. The table lists only those contaminants that had some level of detection. Many other contaminants have also been analyzed, but were not present or were below the detection limits of the lab equipment.

The EPA requires different reporting methodologies for different contaminants. A brief explanation of our reporting methodologies for several detected contaminants is provided below:

Fluoride – Fluoride is added during the drinking water treatment process since it has been proven to promote strong teeth. Fort Riley water treatment plant operators check fluoride daily and strive for a 0.9 ppm average concentration. The range of levels detected during 2002 varied from a low of 0.19 to a high of 0.95. All values were below the MCL.

Lead and Copper - The EPA requires us to report the 90^{th} percentile value of the most recent round of sampling, as well as the total number of sampling sites exceeding the action level. The 90^{th} percentile means that in a ranking of 10 samples with the highest level of a contaminant, the ninth highest sample is the value that represents the 90^{th} percentile. None of the sampling sites exceeded the action level for copper or lead. Because of the low levels detected in the past, Fort Riley qualifies for reduced monitoring every three years.

pH – This is a relative measure of the acidity or alkalinity. Units are from 0 to 14 with 7 being neutral. Fort Riley water treatment plant operators check the raw water for pH daily. Although the average value for 2002 is 7.62, the daily pH values ranged from a low of 7.47 to a high of 7.87 for the year. All values were below the MCL.

Total Coliform - For total coliform bacteria, Fort Riley is required to collect a minimum of 25 samples from the distribution system every month, therefore, a minimum of 300 samples per year. During 2002, a total of 480 samples were collected; coliform bacteria were found in none of the collected samples. These analyses are performed by a KDHE certified laboratory on Fort Riley located at Irwin Army Community Hospital.

Total Trihalomethanes - These compounds are a by-product of drinking water chlorination that are formed as a result of a chemical reaction between chlorine and naturally occurring organic matter in the water. We monitor Total Trihalomethanes on a quarterly basis and have not exceeded the MCL. The 2002 quarterly samples ranged from a high of 76.5 to a low of 38.9 ppm with an annual average of 55.6 ppm.

Public Involvement

This Consumer Confidence Report was prepared by the Directorate of Environment and Safety. For additional information regarding this report, please contact Mrs. Debra Porter, Directorate of Environment and Safety, Drinking Water Program Coordinator at (785) 239-2630.

APPENDIX

Acronyms/Terms Used In This Report

EPA	Environmental Protection Agency
LI	Langlier Index; a relative measure of the corrosivity of water. The index has units between –1.0 and +1.0.
KDHE	Kansas Department of Health and Environment
MCL	Maximum Contaminant Level; the highest level of a contaminant that is allowed in drinking water.
MCLG	Maximum Contaminant Level Goal; the level of a contaminant in drinking water below which there is no known or expected health risk.
AL	Action Level; the concentration of a contaminant which, if exceeded, trigger treatment or other requirements which a water system must follow.
pH	pH units; a measure of acidity or corrosivity in water.
ppm	parts per million; a unit of measure equivalent to a single penny in $10,000.
ppb	parts per billion; a unit of measure equivalent to a single penny in $10,000,000.
pCi/L	Picocuries per liter; a measure of radioactivity in water.
SDWA	Safe Drinking Water Act; Federal law that sets forth drinking water regulations.
umho/cm	micromho per centimeter; a measure of the electro-conductivity of water.